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The manner of butchering a deer is stereotyped. To remove the hide, cuts are made encircling the neck just back of the head, down the belly to the tail, inside the legs, and around the hocks, taking the tail with the hide, but leaving the head and hoofs on the carcass. If the headskin is desired as part of the hide, the belly slit is continued to the lower lip, and additional cuts are made around the base of the antlers, then on a line joining them, and from this line down the middle of the face to the upper lip. The skin is folded flesh side in to prevent it drying out while it is being carried to camp. One who kills a deer owns its hide and flesh, but he is obliged to give certain portions to those who accompany him, should they want them; to wit, both hams (cut close to the spine and well down on the leg) and the rib section. He reserves for himself particularly the skin and the section along the backbone containing the long tendons. This is said to divide the carcass into four equivalent portions. Anyone may have the legs and viscera which remain. Brains and marrow from the spinal canal are collected for tanning, antlers to furnish picks for digging clay and flaking punches for arrowheads, dewclaws for rattles, and sinews for bowstrings, sewing, etc. Mountain sheep horns are taken for ladles and arrow wrenches.

Cotton-tail and jack-rabbits, coyotes, and wildcats are tracked in the snow for the sake of their pelts which furnish warm robes and bedding.

I (Sinyella) used to stay in Coconino Basin in the winter. I was then a grown man. There was a little snow covering the ground. I and another man went out to hunt deer on the plateau. We saw no deer tracks but we found those of a bear. We followed them and after a short distance we saw the bear walking ahead. We followed him: he did not turn around. We hid behind a big dead cedar tree which was lying on the ground about fifteen meters from where the bear stopped. The bear did not turn around: he was busy digging up the ground. First I shot at him with a gun and the other man shot too; we both hit him and he fell dead. We waited a little and, as the bear did not move, we loaded again and approached quietly pointing the guns at him. When we were within a few yards of the bear, which lay still, we both shot again. Then we took hold of his leg gingerly and pulled it. We said, "It is dead," and then we skinned it. We did not eat the flesh, just carried the skin home. We kept it, but did not know what to do with it, so eventually we threw it away. A long time ago the old folks ate bear meat, but I never saw it eaten in my lifetime.

I killed three bears. The second occasion was when I wanted to go and see the new town of Williams; there were few houses there. When we were west of Red Lake — there were four or five men — we wanted to stop and hunt deer in the little mountains. Two of us went right to the top of a little mountain; we took up a position where the deer trails crossed. We wanted some of the others to go around the far side of the mountain, where, by making a little noise, they could chase the deer to the spot where we were waiting. We had been there only a little while, when we heard something running toward us. We thought perhaps it was a buck. Then we saw it running out of the trees. It was a bear; he was coming straight at us. We felt afraid

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281 [412] have been cut along each border of the neck, aids in stretching this tough section of the hide. Excess moisture is scraped off.

281 237 Tan has been previously prepared. Fresh deer brains are roasted and mixed into a ball of yucca fiber. The raw marrow from the spinal canal is mixed into another ball. After being dried on the coals, these will keep indefinitely. The brain is used before the marrow. The brain and marrow of a single deer is ample to tan its hide; half is sufficient, but if the skin is not soft enough, more must be used.

281 One of these balls is worked up in cold water into a soapy liquor. Spraying mouthfuls of this over the hair side, as well as the flesh side at the ends, the skin is rolled up from the neck and tail inward. The legs which protrude from the double roll are wrapped around it to prevent drying out. After being set aside long enough for the tan to soak through, it is spread in the sun, hair side up, to dry somewhat. Now it is straightened, hung over a rail in the sun, and vigorously rubbed and pulled until soft and pliable. The seated tanner catching the skin under his feet stretches it in every direction. Rubbing and working with the fingers creates considerable friction which presumably melts the grease well into the pores. After a second working over the whole surface, it is laid flesh side up to dry in the sun. While rubbing the skin, at which [476] several friends may help, they sing:—

[539] Wâtim'a wa'a'ŋgadj (a hero's name) — aháwamuhavi he walks up in the water (i.e., the Colorado).

ya'i'vu'i'wîda'

This completes the tanning, which occupies the day. During the whole process care has been taken to prevent the white skin from being soiled, resting it on an old blanket or heap of leaves. Skins are traded while yet [438] a little stiff, i.e., without the final rubbing,[a] presumably because the fineness of finish depends solely on the amount of labor one wants to expend on it—and this is left to the ultimate consumer.

If it is desired to stretch the skin somewhat, little slits are cut entirely around its edges, and it is buried in damp earth over night, and pegged out in the morning. Moccasins, etc., which stiffen after a wetting, [294] are similarly buried over night and worked pliable in the hands next day.[1]

Mountain lion and deerskins are also tanned with the hair on. The skin is fleshed, after a little water is blown over the flesh side to soften it. (It must never be soaked.) After brain tan is sprayed over the flesh

[171] [1] The Navaho bury mountain lion skin in the earth to make them pliable (Francisco Fathers, 1910).

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Bows, Arrows, and Quivers

Both the self and the sinew-backed bow are used, although the former is more common. Arrows are either arrow reeds with willow foreshafts, or entirely of wood. The position of the bowman is three-quarters face toward his quarry with the bow held vertically. It is gripped slightly below the center. The arrow is held in position with the left forefinger until ready to shoot; then it rests on that hand to the left of the bow. It is pulled back at shoulder level and the bow held rigid while it is let fly. A variety of the secondary release[1] is used, in which the arrow is grasped well forward in the feathering while the first and second *finger tips bear on the string* (Fig. 21). Either reed or wooden arrows are used with self or sinew-backed bows. Either bow will carry about 175

Fig. 21

Fig. 22

Fig. 21. The Variant of the Secondary Form of Arrow Release used by the Havasupai.
Fig. 22. Section of a Sinew-Backed Bow.

m., but the effective range is 30 to 45 m. At this range the arrow would penetrate a deer from 15 to 25 cm. At a shorter distance an arrow could be driven completely through a horse. Mountain sheep have been killed when shooting down from a hundred meter cliff. Allowance is made for windage; but rain and snow are said to have no effect on the flight. No prayer is said when shooting, nor will sickness or menstruating women in the house where it is kept affect the power of a bow. The arrow was carefully withdrawn after the kill; heads and feathers of broken arrows were saved.

The best wood for bows (*kdpá'*) is called *kdp'âyîma' a*, or *kdp'â*, or *puîma'd*, which is probably the ash (*Fraxinus anomala* Torr.). A young tree, about 1.25 m. tall, is selected, and its branches trimmed close so that it will grow straight. In two years this is ready to cut, for the trunk

[1] Mooney, 143-146.

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322 411 is then 3 to 5 cm. through. Shaping proceeds without waiting for the pole to season. A good bow should bear a dark streak (medullary ray?) along its inner face, not on the back: such a bow will not easily break. The pole is cut to the proper length for a bow, six spans (thumb to middle finger), measured three toward each end from the middle. Some bows are only five spans. After the bark is removed, the pole is trimmed to the lines shown in Fig. 22, leaving the back in its natural state. Frequent sighting along the bow keeps the trimming symmetrical. The [412] cutting is done with a stone knife and finally rubbed smooth with a grit-stone. The width at the grip should be that of two fingers (first and middle fingers lying flat); at the ends one finger wide. Its thickness is not measured. Fiber tension in the green bow gives a marked curve opposite to that when strung. The bow is set aside to season for a month: if it is strung sooner it is likely to acquire a permanent curve. When ready for stringing the nock is cut into the edge at a convenient point. There is no wrapping for a grip, nor are decorative marks or paint applied.

411 322 237 Oak is used as well as ash for sinew-backed bows (*mšmd*", sinewed?): it is grown in the same way. Mesquite is also used, if it contains a dark streak. The bow resembles the self bow, but it is somewhat shorter, five spans, and only half as thick, although the width is the same. After seasoning for two months or more until it is thoroughly dry, it is ready for the sinew reinforcement. Nocks are first cut. The back is scraped as smooth as possible and fine lines are scratched on it longitudinally, [412] using a stone flake with a serrated edge. After glue is applied over half the back, a broad sinew is laid on beginning at the middle, stretching it toward the tip. This is rubbed in the same direction with a smooth stick in order to make it adhere. The process is repeated for the other half of the bow, the sinew layers lapping at the middle. Three more layers are similarly added, setting the bow in the sun to dry partially before each application. The sinew extends over the back quite to the inner face. The first two layers are brought over each end and down the face for about 1 cm. The ends of the last two layers are left free, but twisted together. A sinew is bound in the nocks to hold the sinew backing fast. When dry, the grip is bound with a buckskin thong, centering slightly [439] below the middle. Red cloth, obtained from the Hopi, is passed back [531] and forth longitudinally through this binding on the inside face, to produce a checkered effect. Red paint is used in default of cloth. The 411 sinew layers part from the wood when the bow is old. This is checked by 237 binding at intervals with sinew. This bow is always kept strung, al-

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though the string is loosened somewhat when not in use. New bow-strings are a necessity, because a worn string might snap and the tension of the sinew backing is such as to reverse the arc, break the wood, and "perhaps drive a broken end into a man's side, killing him." The bow is kept in a buckskin case; a tube with a single seam. Specimens of such

Fig. 23 (50.2-1601, 1599). Quiver and Self-Bow.

bows are not extant. No trussed or compound bow of any other description was used, but the trussed bow is credited to the Navaho.

The bowstring (*ĭmĕcma hăpudjĭndgiă*) is always sinew (*ĭmĕcma'*); leather and yucca fibers are never used. The best sinew is that from the hind leg of a deer or mountain sheep. (Tendons are pulled from the hind legs from knee to hock. Others are stripped from both sides of the deer's backbone beginning at the withers, leaving them attached to each

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411 other at the forward end. These are hung up to dry.) The sinew is
237 soaked in water over night, scraped with the back of a knife, and separated into fibers when partly dry. To make the bowstring, two bundles of these are rolled together between palm and thigh, new lengths being added by rolling in as needed. Three bundles were preferable; these were rolled together, never braided. The bowstring is tied permanently to the upper end; the hitch for the lower end is shown in Fig. 24a. This
[536] is a poor man's style; a rich man would tie a length of buckskin to the loose end and continue the wrapping for another 5 cm., fastening with a
411 half-hitch. To string the bow its upper end is set under the right instep, and while the lower end rests in the left hand, the bow is sprung by pressing with the left knee; then the right hand fastens the string. When strung, the spring of the bow is tried, and a song to the bow and string is chanted: hápúagwlóà (Let this be strong; let this not break).

[788]

Fig. 24 (50.2-1221, 1223). a, Ties for Bowstring; b, Method of securing Arrowhead to Shaft.

The wrist protector (*saldmé*) is simply a broad band of buckskin encircling the wrist, somewhat trimmed to fit the heel of the hand. It is fastened by taking up the slack in a loop which passes through both ends of the band.

Boys sometimes use small bows of men's type but the normal boy's bow is D-shaped. One in the collection measures 60 cm. from tip to tip, the chord of the arc 25 cm.; another 65 by 25 cm. Boys use only reed arrows, with sharpened foreshafts, and feathered with the plumage of the hawk, flicker, etc.

Reed arrows (*dp'a"dt'a'* or *dt'a"dp'ad'a*; *dp'a"a*, arrow) are most
411 common. Arrow reeds (*dt'd'*) are gathered green. In order to straighten
322 them, the crooked part is pressed on hot ashes placed on a flat stone, or in the groove of an arrow-straightener (*doθúwd*). Stones are also heated in the fire for this purpose.[1] The joints are then trimmed. Wooden arrows (*dp'd'a'i'i*; *i'i*, wood) are made of an especially hard willow (*dmavdlá*, probably desert willow). These branches were peeled and left in the sun until partially dry when they could be straightened with a wrench, never by heating. The wrench (*múkwapadjiá médémidiá*) is
[321] a mountain sheep shoulder blade or horn in which several holes have
[412] been drilled.

[1] The shaft is not wet with the tongue at the point to be heated as the White Mountain Apache do.

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been drilled. Straightness is determined by sighting. The arrows are next cut to proper length; for use with the self bow, from tip of forefinger to top of biceps; for the sinew-backed bow, from tip of middle finger to bottom of biceps. (This may apply to wooden arrows only). Reed arrows in the collection measure 75 to 76 cm., of which 15 cm. is foreshaft; willow arrows, 70 to 73 cm.; and boys' reed arrows, 72 to 77 cm. with 9to 12 cm. foreshafts. Willow shafts are trimmed with a knife—which like all knife movements is toward the body—and then rubbed between two grooved gritstones (*patamdlia*) of pumice held in the hand. The shaft is a true cylinder of the diameter of arrow reeds except for a slimmer section where the feathers will be bound and for a flare at the nock. The nock (*padjdtaúiga*) is next cut; in a reed arrow this comes just above a joint. The foreshaft for the reed arrow is also willow, trimmed to size, about 15 to 20 cm. long, and pointed at both ends. After this is painted red, it is glued into the pith channel of the reed. The end of the shaft is then wrapped for 2 to 3 cm. with sinew, fastened with glue, to prevent it splitting. Finally the foreshaft is split to receive the arrowhead, which is wet in the mouth, glued in, and tied on with sinew, which is not, however, glued (Fig. 24b). It is prayed to that it may stay tight. Many arrows, used for small game, have simply a sharpened foreshaft.

411 322 [412] [782]

Stone arrowheads range from 3 to 6 cm. in length; the smaller are placed on reed arrows, the larger on wooden shafts. These are triangular, with a deep, square notch in the base, and with the cutting edges reaching almost to the base. If an arrowhead tends to work loose, it is nicked well up the side to aid in retying. Stone heads were flaked on the heel of the hand with an antler tip cylinder. Bone or antler arrowheads are not used. Blunt points for stunning small game are not manufactured, but a corncob may be placed on the point of the foreshaft for this purpose.[1]

411 324 [321]

Willow arrows are often decorated with one to three zigzag or wavy grooves (*dpdcd'ui'ga*) running the length of the shaft, representing lightning (*vitat'djd*). These are made with a tool consisting of a wooden block with a groove across one face into which there protrudes the point of a knife thrust through from the back. The shaft is drawn through the groove, rocking it slightly, so that the point may trace a sinuous line.

411 531

The eagle and hawk furnish the best feathers for arrows, those of a smaller blue and gray hawk and possibly other birds are also used. Young

237

[1] It is curious that the metal points that are made have the series of rounded shoulders where the tang joins the blade which occur in early trade examples found in eastern United States [171]

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231 eagles and hawks are captured in the nest and raised in captivity until
237 the plumes may be plucked. A shade is erected over a replica of the nest
417 in which the helpless bird is placed; when he grows he is tethered. Preferably a cage is built which resembles the frame of a sweatlodge but is somewhat higher. Brush is placed on top for shade. Cross sticks inside support a nest, on a level with which is a doorway for feeding.

237 Feathers are split beginning at the tip, and the narrower vane discarded. The shaft of the wider vane is scraped thin and trimmed. The
411 whole length of the plume is used; these are about 13 cm. long for reed
531 arrows, 23 cm. for willow. The shaft is decorated as shown (Fig. 25) before the vanes are placed; the bands are 1 cm. wide on reed arrows, 2 cm. on willow. Sometimes the whole distance covered by the vanes (or most of it) is colored red alone, and occasionally the entire shaft is painted red. This painting is purely decorative: these are not property

Fig. 25 (50.2-1222). Method of Feathering and Painting an Arrowshaft. The colors used are indicated as follows: heavy black, black; heavy stippling, green; light stippling, red.

411 marks, for a man could always recognize his own arrows. Glue is applied at the points where the vanes are to be bound on, and also over the paint, where it serves as a varnish. Sinew is chewed and drawn between the teeth until it is soft, when it is wrapped several times around the nock end by twirling the shaft. A few barbs at the tip of the first vane are caught under the wrapping, then a few of the second vane under the next turn, finally the third, and the wrapping is then completed. The vanes are carefully straightened and the quills of all three simply wrapped with sinew. The sinews are not tied, the glue holding them fast. The edge of the vane is next trimmed back toward the shaft so that it is broader at the tips than the butt,[1] except that the last few barbs at the butt and the down are left long. The ends of the barbs at the tip are cut off square to the shaft. Flight is retarded if the vanes are left broad. Three vanes are always used. Many arrows have one of the vanes in the plane of the nock, but this is not essential. Arrows twirl in flight, but the vanes are never placed spirally. Arrows are left in the sun to dry for

[1] This is not properly shown in the illustration.

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171 372 Most Southwestern peoples, like the Havasupai, use a simple fire-drill, a single piece of wood. The composite drill, having a short fore-shaft of wood of a special sort set in the end of the drill, occurs in this area among the Navaho. The Hopi use it at least in their New Fire ceremony. Northward it is distributed among the Paviotso, Klamath, Modoc, Washo, Lemhi and Wind River Shoshoni, Crow, Green River Salish, and Snohomish or Snuqualmi.[1] The materials used might be compared. I note that the Havasupai use the flower stalk of bear grass for the hearth, the White Mountain Apache that of *Yucca baccata*, and the Navaho a soft stalk of a large weed. The Shivwits, like the Havasupai, use mesquite for the drill. With regard to the pits on the hearth, the Paviotso prescribe four as the standard number. Similarly of the Navaho hearth, it is said "small holes, sometimes four in number, were cut into it,"[2] and one Havasupai specimen (50.2–1234) has four holes, but this was not specified as standard for them. The Shivwits made pits all along the hearth. It may be that we have here a diffused trait; on the other hand, it may be nothing but an expression of the pattern number, four, obtruding itself on every occasion.

The slow-match, a long roll of cedar or sagebrush bark, is widely distributed through the western plateaus. It is used by the Havasupai and by the Navaho according to them (p. 226), Hopi, White Mountain Apache (?), Wind River and Lemhi Shoshoni, Klamath, Modoc, Thompson, and Nisqually.[3]

285 171 Bark mats or blankets may be in general use throughout the plateaus. The smaller Havasupai type, woven spirally, is also found among the Navaho.[4] Reed mats are used instead by the Pima, Luiseño, Northern Shoshoni,[5] and Maidu.

171 411 237 As Mason and Wissler pointed out years ago the sinew-backed bow is found throughout the western plateaus, in the western Plains, and on the Pacific slope.[6] The following notes will help to define its range with greater precision (Fig. 28).

In the Southwest it is used by the Mescalero, Jicarilla, Southern Ute, Navaho, White Mountain Apache, and Havasupai.[7] There is a prehistoric sinew-wrapped bow from southern Colorado in the Museum

[1]Hough, (e), 885; Fewkes, (d), pl. 3; Lowie, (i), 222; (a), 189; (b), 214; Hough, (a), 536–543; Barrett, (a), 257; Haeberlin und Günther, 15. Washo information from Doctor R. H. Lowie, 1926.
[2]Franciscan Fathers, 65.
[3]Hough, (e), Pl. 26; Lowie, (i), 223; (a), 189; Chamberlin, (a), 35; Barrett, (a), 257; Teit, (a), 207; Haeberlin und Günther, 15.
[4]Franciscan Fathers, 467.
[5]Russell, (d), 134; Sparkman, 210; Dixon, (a), 148; Lowie, (a), 184.
[6]Mason, O. T., (f); Wissler, (a), 159.
[7]Pattie, 164; Gabbard, (b), 261; Hough, (e), 887; Letherman, 203; Mason, O. T., (f), 640, 666, Pl. 79, Fig. 3; Dorsey, G. A., (b), 188; Bourke, (b), 87.

[Text continues on p. 160]

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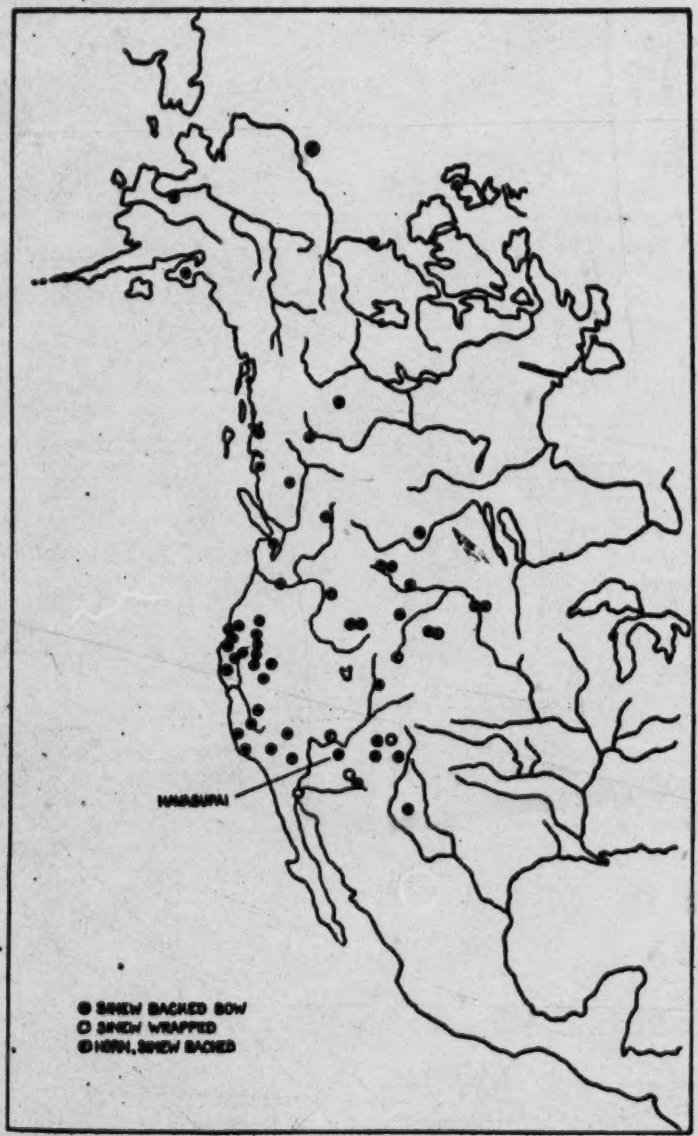

Fig. 28. Distribution of the Sinew-Backed Bow in North America (omitting Eskimo types).

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of Anthropology, University of California (2–3342). The Tonto have a bow "strengthened at points by a wrapping of sinew," and that of the Yuma is also wrapped with sinew.[1] In California and the adjacent part of the Basin the sinew-backed bow is used by the Chemehuevi, Panamint, Kitanemuk (Tejon), Salinan, Yokuts, Wükchumni, Washo, Paviotso, Northern Maidu, Yana (?), Northern Wintun, Eastern Pomo, Atsugewi, Achomawi, Hupa, Yurok, Rogue River peoples, Modoc and Klamath.[2] According to Kroeber this occurs generally in California south to the Tehachapi Range, including the Panamint and Yokuts and a single specimen attributed to the Chumash. The Cahuilla, the Northern and Southern Diegueño did not have the sinew-backed bow, nor did the Hopi, and perhaps Shivwits and Uintah.[3]

To the north and east this form is recorded for the Northern Ute, Lemhi, Crow, Blackfoot, Gros Ventre, Plains-Cree, Cheyenne, the Sioux of Montana, Hidatsa, Takelma, Wishram, Wasco, the natives of Port Discovery on Puget Sound, Middle Columbia Salish, Shuswap (?), Chilcotin, Carrier, Sekanai, Ts'ets'aut, Kenai, and the Tinneh of the lower Yukon River.[4] Mackenzie observed the bow in what is probably Bella Coola territory.[5] Another type, consisting of joined pieces of horn and backed with sinew is known from the Kaibab, Wind River[6] and Lemhi Shoshoni, Cheyenne, Hidatsa, Blackfoot, and Nez Percé. Some of those referred to above may be of horn rather than of wood. The data used here are not sufficient to distinguish between the wide bows of the Pacific slope and the slender variety of the Basin and Plains, as O. T. Mason does.

The Eskimo have still another form of the sinew-backed bow, which commonly has a cable of sinews extending along the back. This is known from Baffin Land to East Cape, Siberia. The trussed bow is also credited to the Navaho by the Havasupai. Compound bows are widely distributed in Siberia and other parts of the Old World.

There is some suggestion that the length of self bows increases in the direction of Baja California. The relevant data (chiefly approxima-

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[1]Smart, 418; Trippel, 576.

[2]Whipple, Ewbank, and Turner, 32; credited to the Chemehuevi by the Southern Diegueño [Spier, (d), 350]; Coville, 360; Mason, O. T., (f), Pl. 63, Figs. 2, 3, 4; Pl. 92; 675; Mason, J. A., (a), 142; Powers, 373; Barrett, (b), 16; Lowie, (i), 245; Snyder, 327; Dixon, (a), 202; Pope, 339, 341, Pl. 52, Fig. 2; Pl. 48, Fig. 15; 337, Pl. 47, Fig. 8. Pomo data from Dr. Edwin Loeb; Wükchumni from Miss Ana Gayton. Dixon, (c), 213; Barrett, (a), 346; Quarterly Oregon Historical Society, 7, 1906, 170.

[3]Kroeber, (g), 58; Spier, (e), 350; Lowie, (i), 245.

[4]Culin, (a), 96; Lowie, (a), 175, 191; Thwaites, III, 19–20; Lowie, (g), 230; Wissler, (a), 155, 189; Krueber, (b), 180; Skinner, 83; Grinnell, (b), I, 174. Pope, Pl. 48, Fig. 14, 340; Sapir, (a), 272; Mason, O. T., (f), Pl. 62, Figs. 2, 3; 676, 677; Teit, (c), 518, 782; ms. on Middle Columbia Salish; Morice, (b), 58, 59; Boas, (b), 563; Wasco specimen, Field Museum no. 60491.

[5]Mackenzie, II, 311.

[6]Powell, 128; Lowie, (i), 246.

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back on the breast in a broad decorated flap; the sides of the apron are fringed and the bottom slit into long fringes. Both the neck loop and waist thong are fastened permanently, so that the garment must be put on over the head. The woman's dress is made by the men. 291 294

The skin is worn flesh side out. It is laid flat on the ground and lines drawn with the aid of a bow, the back furnishing those for the curved bottom and the string the straight lines. Lines are marked with a wet stick or charcoal; formerly paint was used as well. The length of the dress is measured on the woman for whom it is intended, so that the breast flap may be turned down at the top of the sternum. The fringe on the breast flap consists of short broad tabs; the line delimiting them being heavily scored and wetted on the wrong side, otherwise, since the skin of the neck is thick, they do not swing freely. The fringes at the bottom are first cut in broad strips; these are drawn and cut parallel to the median line, not radially. Subsequently these strips are slit into narrow fringes while resting on a block of wood. The two at the ends however are not slit lengthwise, but their edges are cut obliquely in short fringes. Each edge of the apron is similarly cut into short oblique fringes. A neck loop, 2 cm. wide, is adjusted on the woman's person and sewed in place with a thong. The tab ends of this loop which hang over the breast flap are sometimes slit into strings on which short bone tubes or dewclaws are hung as rattles (*sdwó*). On old women's dresses these jinglers include deer eyes (which lack special significance). They are prepared by cutting a tiny hole to drain the fluid within, blowing them up to dry, inserting a kernel of corn, and tying the aperture. Similar rattles are also threaded on the side fringes for a short distance down from the belt. The scored line on the breast flap is sometimes filled with paint; other ornamental lines are sometimes painted on it. The loops in the edges of the neck skin formed by the tanning pegs are also ornamental. A thong is tied between the forelegs of the skin to go in back of the waist. The outside of the garment then receives a liberal coating of red paint. One such dress took five hours to make. 291 294 301 531 [237]

The back piece is an apron hanging from waist to ankles. Like the front piece, the fringes at the bottom are long and those at the side short and cut obliquely. A long extension at each side of the waist line, cut from the length of the skin, serves as a tie-string. Two long horn-shaped pieces, with their edges serrated, are added at the middle of the waist line so as to fall down over the outside of the garment by way of decoration. The rear apron is put on before the front apron which then laps the back piece at each side. A buckskin belt of semilunar shape, slit in fringes 291 294 291

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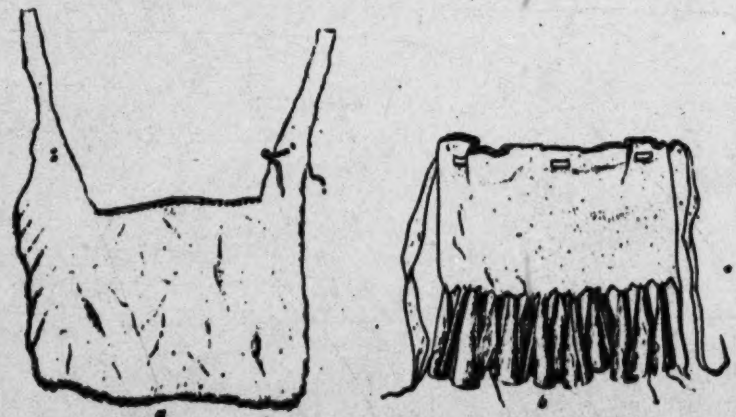
291 (almost an additional apron), is arranged to hang in front. A Hopi woven belt is then added as a girdle.

291 237 301 Strings of rattles are tied at various points along the woman's belt. These are small deer or mountain sheep hoofs, or sometimes tubes cut from the leg bones of jack-rabbits, cotton-tails, and wildcats, and in recent times metal jinglers. They are strung on the fringes of a doubled length of skin (Fig. 40b).

291 The underskirt is a short, somewhat crescentic apron which hangs in front to just above the knees. Like the back apron, it has two extensions for tie-strings. The actual tie is made with a thong which passes



[237] [301]

Fig. 40 *a* (80.2-1563), *b* (80.2-1563). A Woman's Underskirt and Rattles usually tied to a Woman's Belt.

[294] through both strings. The waist line is hemmed (sewed with a narrow thong in a running stitch), the sides and bottom fringed, and the tie-strings serrated (Fig. 40*a*).

281 286 [291] Small blankets woven of rabbitskins are worn as robes by the women. On occasion a man would wrap a blanket about his body, passing it over the right shoulder and under the left arm.[1] These also furnish bedding. Jack-rabbit (*dgáld*) and cotton-tail (*hdlô'o*) skins are cut round and round into long strips. Two of these are rolled together [283] on the thigh into a rope. This is wound to and fro between two parallel rows of pegs, and strings, obtained from the Hopi, are twined through

[1] Clothing is never fashioned of rabbitskins

[Text continues on p. 181]

1: Spier E-5 (1918) 1928
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woman's moccasin. This differs from the woman's type only in that the ankle piece is short. Two sets of tie strings are furnished in the older style of fastening as shown in Fig. 42; a short thong ties into a corresponding hole, a long thong is wrapped several times around the ankle before tying. The tops of moccasins were sometimes turned down inside to present a finished edge. Porcupine quill decoration (*gwawa tapt'*) was then added in a band encircling the top about 1 cm. from the edge. The band was 1 to 2 cms. wide, the quills standing vertical, black, red, and green alternating. The quill (*gatčtčnyamta: gatčta*, porcupine) was

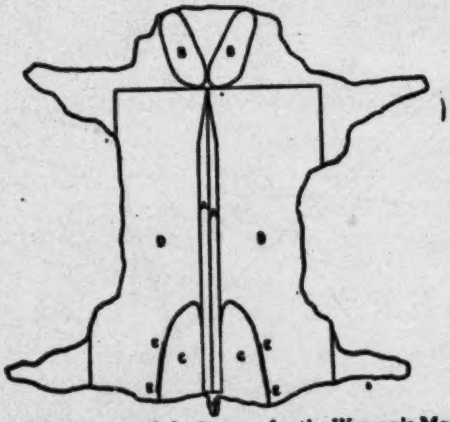

Fig. 44. Distribution of the Pattern for the Woman's Moccasin.

flattened before it was applied.[1] Men's moccasins were usually painted red, but there was no other decoration, appendages, etc.

The woman's moccasin (*pak'emahanyō'*) has a two piece upper, a toe piece and tongue in one, and a long ankle flap.[2] This flap is worn wound around the ankle, not the calf as Pueblo women wear it. The single tie-string is wound over this and its loose end tucked under a fold. The pattern is distributed as shown in Fig. 44. The deer hide is folded lengthwise and split from tail to neck. Tie-strings (A), 2 to 3 cm. wide, are cut. The contour of the sole (B) is marked on the folded, thick neck skin but each sole is cut out separately. The toe and tongue piece (C) are marked on the next thickest part of the skin, the withers, using an old upper as a pattern. A leaf of narrow-leaf yucca is chewed into the edge of the sole,

[1] The method of coloring these is forgotten.
[2] This is in general the Hopi pattern described by Wissler, (a), 186.

1: Spier E-5 (1918) 1928
NT14 Plateau Yumans NT14
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with the exception of the top. It is decorated with a band of indifferently colored porcupine quills similar to that placed on moccasins. A headband or a squirrel skin cap is added to confine the hair. One such band (50.2–126) is made of a strip of deer legskin, with the ends sewed with a running stitch. (The sinew, as in all sewing, is prevented from pulling out by a simple knot in each end.)

Women's hair is banged below the eyebrows to the outside of the eyes and at the sides and back to the shoulders or a little below. When rather long it tends to fall in front of the face; it is then brushed back, not over the shoulders, but so that it can be caught under the chin. Or the locks above the ears are tied together at the occiput, enclosing those at the temples.[1] Girls' hair is dressed like that of their mothers. Cushing observed that the small boy's hair was cut short except for a long tuft on top, "like the crest of a quail."

Feathers are, perhaps, worn only on gala occasions; their function, when worn at dances, by men and women, is to cause the rain to fall. Only eagle feathers are used and the down is preferred to the plumes. The typical decoration is a bunch of down, 20 to 25 cm. long, pendent in the back from a cord, 10 to 15 cm. in length, tied to the top of the head. (The cord, lapping the quill, is bound to it with a wrapping of sinew.) Plumes are also stuck upright in the headband at the right temple. One specimen (50.2–1628) consists of two plumes 37 cm. long, placed side by side, and held in place by a sinew lashing and a peg piercing both. Two small downy feathers are lashed to the shaft of each at its tip.

Often a comb of long splints, beautifully plaited together with colored threads, is thrust into the headband, to which two eagle plumes, either white or red, are attached by cords, so as to float about in the wind.[2]

Fig. 46 (50.2–1894). A Mescal Fiber Hairbrush bound with Buckskin.

The hairbrush (*tcī'ī*, any brush) is a bundle of stiff fibers from mescal leaves, folded in two, and bound with buckskin halfway to the free ends. A cap of buckskin or cloth is stuck over the butt with piñon pitch and tied about with a thong. A new brush is 11 to 13 cm. long by 2 to 4 cm. in diameter (Fig. 46). As the fibers break off in use, the end is evened by burning. The principal use of brushes is by women; men, as a

[1] It is not held in the mouth in the manner of the White Mountain Apache.
[2] Cushing, (a), 848.

2:Iliff Y-5 (ca.1901) 1954 NT14 Plateau Yumans NT14
Havasupai

CHAPTER SEVENTEEN

The Frightened Shamans

514 Manakadja had come to my office on an official call. His linen duster and the derby hat perched atop his braids were special attire. These were the only ones I had seen, so I knew the occasion was important. After the exchange of greetings, tension eased a bit, and the chief reached into an inner recess of the 413 237 duster and brought forth a thin slice of bone. It was a headscratcher, made from the leg bone of a deer, eight inches long, flat and highly polished. It widened from its point to a broad end through which a hole had been drilled for the insertion of a [532] buckskin thong. A louse, complete in every tiny detail, was tattooed on its point.

Fully appreciating the humor of his act, he illustrated how one stirred up the little fellows when they nipped too hard. He asked, "You savvy?" Then added, "You like 'em, two bits."

515 Necessity had devised this clever instrument; for even though 413 we waged constant warfare against lice, and the Indians cleaned one another's heads, vermin were still a scourge. If one were too busy in his garden or at games to have a head-cleaning, the headscratcher came into use. I occasionally picked up a louse or two myself during a conference or in a wickiup while working over the sick.

I bought the chief's headscratcher. It would convince my friends back home that I had lived among a primitive people. It still is one of my choice possessions.

[p.146]

2:11iff Y-5 (ca.1901) 1954 NT14 Plateau Yumans NT14
Havasupai

481 move about and the obstacles of precipices and gorges could not stand in the way. They were ingenious in scaling walls, so the employees at the school merely widened the Indians' trails and used them. The men produced a superior quality of buckskin by a 281 process of tanning with the roasted brains of deer and the marrow [237] of the spinal cord. This was a tedious process of scraping, soaking, burying the skin in wet sand and rubbing it between the hands until soft and pliable. From these skins they had made moccasins and clothing for the entire family. But now, "store clothes" were [177] becoming more and more common.

178 Even before the beginning of this century, the tribe's habits and customs were slowly yielding to the pressure of civilization. The clothes they wore, the food they ate, the language they spoke, their very thoughts were undergoing change. Instead of sitting at their grandfather's knee learning the tribe's history and the traditions that had molded the character of the people, their children were now bent over books in the classroom. At the Sunday services they were learning about a new and strange god.

224 But the loss that stirred the deepest resentment was that of their 648 hunting grounds. In this their gods could do nothing. The superstitions and taboos to which a hunter must conform were now nullified by Arizona's game laws limiting the open season, which also restricted the use of charms to that brief period when deer were being slaughtered by the white man's guns. Even the prized [789 calculus (a solid substance obtained from the paunch of a ruminant) 237] carried by the hunter to charm the deer and make it an easy target, lost all value.

The restrictions on their hunting range were brought home to me forcibly the day a forest ranger stopped at my office and said, "I'd like to see the one in charge down here."

"I am in charge," I told him.

He regarded me coldly, then made his accusation: "You permit the Indians to kill deer out of season. It's against the law."

Someone had told. A picture flashed through my mind, one that I had acquired only a day or so previously. In the late afternoon, I

854 The cradleboard, 70 to 75 cm. in length and about 25 cm. in width, consists of an oval foundation across which willow slats are placed to form the
285 backboard. A circular, woven hood about 28 cm. in diameter is fastened at
283 right angles to the backboard so that the baby's head will lie within its protection. Four buckskin or cloth loops are sewed along each side of the backboard, with a long lacing strap attached to the upper left loop. Formerly, a shorter cord, attached to the upper left loop, was laced through the two upper pairs of loops, and a second cord, joined to the third loop on the right hand side, could be loosened separately to facilitate cleaning the baby. A tumpline, formerly attached, is no longer added. When buckskin was in ready supply, it was used for the loops, tumpline, binding straps, and bindings on the backboard and hood. At present, strips of cotton material are used on most of the cradleboards.

854 To prepare a cradle for an infant in earlier times, shredded juniper
[314] bark was used for padding the backboard and for a headrest inside the hood.
A well tanned buckskin blanket was spread over the juniper bark. The nude
●[237] infant was placed on the buckskin with a disposable diaper of rabbit fur, finely shredded juniper bark, or a mixture of fur and bark beneath his buttocks and thighs and over the pubic area. With the baby's legs straight and his arms at his sides, the buckskin blanket was folded sheath-like over his body, leaving only his face and head exposed. The binding cord was criss-crossed through the side loops over the buckskin blanket, immobilizing the
[177] baby with the exception of his head. At a later time, a Hopi or Navaho blanket was substituted for the buckskin; more recently, this was replaced by commercial receiving or cr[illegible] blankets. Today, infants are dressed in baby clothes of design popular in the white culture.

852 There is little ceremony other than the symbolic face and body molding at the birth of a child. Procedure in the care of the infant is essentially the same for both sexes.

Infant Care

844 While his mother rests for four days and nights on a bed of damp sand
854 smoothed over heated rocks, the infant lies supine on the cradle within reach of her hand. A baby is cared for by his maternal grandmother or by his mother if she feels well enough. Men are not barred from the presence of the mother or the infant during or following the birth. The baby's father customarily assists at the birth, and if he is present, he builds a fire and reheats the rocks for the mother's bed each night and morning.

846 Following the birth and on three subsequent mornings, the baby and both
854 of his parents are ceremonially bathed in yucca suds, the baby being bathed by his maternal grandmother first, while his parents and paternal grandmother look on. Thus, the father, mother, and newborn child share in a ritual act which identifies them as a family. The father and other male relatives devote some attention to the baby, usually displaying a particular

Much of a girl's play is a conscious imitation of her mother's work. She loves to play "grinding stone" with bits of sandstone which she pretends are corn. After grinding the "corn" in the proper manner, she pretends to build a fire. (She is discouraged from using coals from the cooking fire.) She pretends to cook in clay dishes which she has made or in metal pans discarded by her mother. 857 524

Girls like to adorn themselves in much the way that children in the culture of the whites like to dress in their mother's old clothes. A small Havasupai girl formerly used fragments of buckskin, woven Hopi belts, blankets borrowed from her mother, and flour sacks or other cotton materials in which to array herself for playing house, or simply for the fun of dressing up. Groups of girls used to enjoy peeling willows for their mothers' basket weaving. Each girl would make a headband for herself from a willow or a strip of buckskin. Around the headband she tied the curly bark peelings, the bushy creation representing hair.

Girls gather gourds which grow wild a short distance from the farm area. Juggling gourds is a girls' sport, but boys occasionally do it. Juggling probably is not as popular now as it was in earlier times. Usually only three gourds are juggled at a time.

Girls and boys play house together, acting the part of mother and father according to sex. Younger siblings, or such dolls as they may have, represent their children.

Dolls of commercial manufacture now are obtained, but formerly several kinds were made by a girl's mother. Boys also played with dolls belonging to their sisters or feminine playmates. Clay dolls were dressed like men or women in buckskin garments. Dolls were also made from cedar bark or corn husks. A more permanent doll was fashioned by boiling a two-pronged deer antler to soften it so the points could be cut short for legs. A stick was bound at right angles to the axis for arms, and a head of clay was molded onto the base of the antler. A face was painted on the clay with a mixture of deer fat and red ocher or a scarlet dye from the soapweed root. A girl's mother or grandmother made a cradleboard for her doll. The cradle was a replica of a baby's cradle and was its equal in quality of workmanship. Doll cradles are still made for the small Havasupai girls of today. These cradles are about 40 cm. to 45 cm. in length and 15 to 18 cm. in width. [177] [237] [386]

A girl, like a boy, learns to ride bareback on a horse. A girl of four or five may be capable of handling a gentle horse alone. A boy, traditionally, is taught to ride when he is about three years old. One father was observed leading a horse on which his 18-month-old son was mounted. Another father reported that his son, aged three, already could handle a gentle horse. [illegible]y girls own saddle horses, or have the use of one occasionally, but a [illegible]ustomarily does not ride about the canyon, whereas a boy older than 1[illegible] 13 years seldom walks anywhere. Both young girls and older women ride astride. 857 868 [562] [492]

881 a few tasks for her mother, she retires to this bed, sitting or lying on it
343 most of the time during four days and nights. The rocks stay hot overnight and are reheated each morning. At her mother's bidding, a girl rises frequently during the day to carry wood or water, or to do some other work so that she will not become a lazy wife.

881 In former times, an old woman, often a girl's grandmother, sat beside
887 her throughout the night singing and talking to keep the girl awake. "Don't be
869 lazy," the old woman admonished. "When you marry, work hard and be a good wife and mother." At present, a girl is permitted to sleep part of the night.

Taboos

881 During this and subsequent menstrual periods, a girl refrains from eat-
262 ing meat, which would cause her face to wrinkle and her teeth to wear out
[263] prematurely. Although Spier (1928, 328) states that salt is not taboo, present informants say it must be used very sparingly. Otherwise, a girl while menstruating may eat much the same as usual, except that soft foods and liquids are preferable for her, and she should eat small amounts. Some foods considered appropriate in former times were corn mush, sllĕ (unidentified) mush, black sunflower seed paste, opuntia pears, and dried soapweed pears.

881 Scratching with the fingernails would leave raised marks or scars on
[237] the skin, so girls formerly used a deer tibia painted with red, black, and
[531] white designs, said to be without significance. Or she might make use of any stick close at hand. At the present time, sticks appear to be used exclusively. These are undecorated. In 1951, a Havasupai girl, while visiting an abandoned storage cist with this investigator, found a stick tucked into a crack under an overhanging rock. The stick, identified without prompting as a puberty scratching stick, was about 8 in. long, 1/2 in. wide, and 1/4 in. thick. It was undecorated and unsmoothed except for one slightly rounded end which probably had been abraded with a stone. The only stick observed in use, however, was any one which happened to be at hand.

[833] Sexual intercourse is prohibited during menstruation. As one informant phrased it, if this taboo is broken "you will be pregnant right there."
[842] Infraction would result in this penalty for either premarital or postmarital
[841] intercourse during menstruation, and for intercourse during the menstrual flow following childbirth.

[856] If a girl at puberty is thin, a fat woman "stands on the girl's back" so
[826] she too will become attractively plump. In practice, a fat woman places one foot on a girl's back, exerting but little pressure. In one instance a girl's father is known to have performed this role.

291 ship period.
302
832
[114] Spier (1928, 183-97) describes clothing and personal decorations for both sexes in more detail than present informants are able to give, but some supplementary data can be added to Spier's.

291 In aboriginal days, both young girls and mature women wore a buck-
[301] skin dress of a style copied in the puberty dress already described. For daily wear, a dress apparently was uncolored. Its usual decoration consisted of buckskin fringes, hoof or bone rattles, or metal jinglers.

Feminine apparel also included hard-soled moccasins with a long upper piece wound around the leg (Spier 1928, 191), a short apron worn in front under the skirt, a wide buckskin apron or belt decorated with rattles, and a woven Hopi belt (Spier 1928, 188-9). A woman originally draped a rabbit-skin blanket around her shoulders. Spier (1928, 128) reports that the blanket was replaced by a shawl, made from four bandannas, which was knotted under the chin and hung to the heels in back.

[287] Two hat styles, a woven basket type and a skin hat cut from the thigh
[285] of a mountain sheep, deer, or antelope, were reportedly worn infrequently by men in aboriginal times. Informants who described the men's hats in some detail knew of no corresponding hat ever worn by women. Another
[415] informant denied that basketry hats were ever worn by either sex, stating that baskets of this shape were in daily use as food bowls, both as containers and as receptacles for food to be eaten. For protection from the sun, women stripped the long leaves from a yucca, tore them in half, and wrapped two a three of them around the head and knotted them on the forehead.

Present informants describe a later style of buckskin dress worn for dances until perhaps about 1940. It was fashioned from two large buckskins
[177] with sides sewn together, the buckskin sometimes being stained red with powdered ocher. A woven Hopi belt of colorful design was knotted at one side, with its ends hanging free. Metal jinglers sometimes were added to the belt ends and to the skirt edge. Necklaces and bracelets of silver,
[301] turquoise, or shell were worn with these dresses, and women painted their
[302] faces variously with red, white, or black designs. The rock for red and white paint was of local origin, but the black came from some distance and was rarely in supply.

Buckskin clothing in aboriginal times was made exclusively by men for both sexes. Dance dresses of the above style reportedly were made by
[768] Chief Watahomigie for his granddaughters, Harriet and Edna Yumiska, and by Dean Sinyella for his daughter, Irene, but these dresses were destroyed upon the death of their makers. While beading was learned at boarding
[177] school by a few women now near middle age, and two or three older women had acquired the skill elsewhere, it was seldom if ever used by the Havasupai.

842 of the pregnant woman by such gestures as covering the face with the hands.

[257] A remedy for barrenness, as related by one informant, was to drink the water in which a rat's nest, saturated with urine and feces, had been boiled.

Intercourse and Continence

843 Spier (1928, 301) was told that sexual relations were improper during
853 pregnancy. There is now some difference of opinion on the matter among informants. The majority assert that continence ought to be observed during the latter months of pregnancy, but they disagree on the time, setting it from one month to as much as five or six months before parturition.

One woman explained that intercourse at regular intervals should be continued during pregnancy to insure proper growth of the unborn child. She thought there was no reason to increase or decrease the frequency (she suggested alternate nights) which she believed to be about right for the well-being of both child and mother. All informants agreed that women formerly observed strict continence for about six months or longer following birth. While they thought it undesirable to conceive while one had a baby in arms and observed that this was a period of great fertility "because you still have blood in your stomach," they admitted that women of today generally relax the taboo after the blood discharge ceases, primarily being careful not to indulge themselves often enough for conception. One informant said, "Now women aren't so fussy. They say that this is an old time belief, and some keep the rule and others don't. They ought to wait two or three months but they don't all wait that long."

842 If a fetus is fertilized by semen from only one male, the child will resemble its father and mother. However, a child of multiple paternity will look like its mother or like no one in particular. It will not have "mixed features like all of the fathers," asserted one informant.

843 Symptoms attributed to pregnancy include temporary distaste for food, nausea, vomiting, desire to sleep more than usual, and craving for particular foods.

Powers of a Pregnant Woman

843 During pregnancy a woman has special power over rain and is lucky at
789 gambling. Two informants said that a pregnant woman could prevent rain but could not stop it after it started, but others maintained that she could also stop rain. She should hold some branches or other objects in her hands, raise her arms together, and move them apart in a sweeping gesture "to scatter the clouds and make them go away." She can accomplish the same end by placing an ax on the ground with the blade up. With either method she says, "Rain, go away," more a command than a prayer, al-

462 that his womenfolk may have assisted in this casual way in former times
[476] when hides were tanned in plentiful supply for trade that would benefit the
[281] whole family.

Clothing manufacture was men's work, and a man cut and stitched for
[294] himself and all his dependents. However, as might be expected, influences
[177] brought a reversal of sex roles in this occupation. Availability of woven materials and of ready-made clothing brought a change of style also. Cotton dresses at first were stitched by hand, but today a few women use treadle sewing machines. Spier (personal communication, 1957) records
[184] that there were a couple of treadle sewing machines in use in 1918. All men's clothing and much of that worn by women is purchased ready-to-wear.

As mentioned previously, puberty dresses continued to be made by men as long as they were in vogue, and a few of the older men still know how to make them.

The art of chipping stone points has been in disuse for so long that
[324] several informants denied that the Havasupai ever made them. One old
[321] man explained that old men in his youth told him that points for arrows and spears came down to the earth on lightning, fell on trees, and slid to the ground unbroken for Havasupai use. Another man said that the Havasupai obtained stone points by picking up those shot at them by Apaches.

At the present time, points of fine workmanship and a variety of types and sizes may be picked up in the canyon, but younger informants urged me not to let the older people know I had collected any. As one woman
[715] phrased it, "In the old days they belonged to people who are dead, and it might bring a ghost around if you handle them." The same request was made concerning potsherds, which abound in a profusion of types. However, an archeologist was able to obtain permission to excavate in the canyon a couple of years later.

Women's Work

Women, exclusively, plaited sleeping mats, while both men and women braided yucca or tanned hide rope. It is likely that both sexes had a hand in preparation of materials and fabrication of the rubbed cedarbark slow match and of braided cotton cord which formed part of the strike-a-light. Springs and mattresses, hemp or nylon rope, and matches have replaced these articles, although young boys and men occasionally braid quirts.
[177] Women commonly made rabbitskin blankets, now no longer used, but they
[297] were sometimes assisted by old men. Cradleboards, still used for every baby, are made by women who also prepare the materials, but a woman may send her husband to gather willows for this purpose.

THE HAVASUPAI

sils, and blankets is owned individually. Each one can dispose of his 422
possessions independently.

The Havasupai is an excellent horseman and packer. He usually 492
has quite a number of horses and does considerable packing on the trail with them. Traveling up and down the steep winding trail to the top of the canyon is very strenous work for the horses and the Indian must have a sufficient number of them so as to rest each horse for a few days after one of the trips.

When first visited by the white man these people dug holes with 241
stone hoes, planted their seeds, but did little cultivating. Only a small acreage was planted, this being irrigated from small ditches running [315]
from dams of rock, logs, and willows piled in the river. Methods of farming are still simple. The ground is first plowed and then cultivation is done with a hoe; some rotation of crops is practised from year to year. Irrigation ditches now serve over a hundred acres of land.

The Havasupai are among the most consistentious farmers in the [448]
Southwest. Their interest centers so firmly in their fields that when remunerative employment is to be had at Grand Canyon the men will leave the work with semi-monthly pay to plant and tend their crops. Planting begins in the middle of April, but previously the fields are cleared of weeds and brush, plowed with a one horse walking plow, and irrigated two or three days before planting.

The tools used are a planting stick about an inch wide and a foot 241
and a half long with one end cut wedge-shaped, and a modern hoe with 412
a blade at an angle to the handle. Formerly a wooden spade-shaped hoe with an extra long handle was used; also, the shoulder blade of a [337]
horse was held in the hands and used to scrape the sand out of irrigating ditches and for scraping out weeds.

Planting is an occupation that most of the family takes part in; 241
even the small children help dig holes. The corn is not planted deep, about three and one-half inches is the usual depth. The lines for the rows of hills are generally drawn with the foot. Kneeling, the first hole is dug with the planting stick; the soil is loosened, and eight or ten seeds dropped in. However, before putting the kernels in the first hole the planter says a prayer. Filling the hole, he takes two or three short steps forward, kneels, digs a second hole, and plants. This he continues until the field is planted.

The planting is not all done at one time but extends over a period of two months. Beans are planted on the same day as corn and placed half way between the corn hills. Both crops ripen about the same time.

When the young corn shoots are about two inches above the ground, they are given a second watering. When the tassels appear, about two and a half months after planting, the corn receives a third and last watering. The fields are weeded at regular intervals and traps are placed for rodents which would otherwise destroy a portion of the crops.

The Havasupai plant a small variety of corn, with ears about six [57]
inches long, known as Mohave corn, which will yield ears in about two months. Other varieties ripen at intervals from mid-August until the last of September. When the ears are ripe, they are gathered in burden baskets. The gatherer breaks off the ears and throws them in the basket on his back while he walks along. The corn is dried on the 261
roofs or on brush heaps. It may be placed in the storage chambers either in the form of husked ears or shelled and piled in a corner. Seed corn is always husked and heaped in a separate pile in a corner. Watermelon, pumpkin, sunflower, and squash seeds are dried, put in cloth sacks and stored in the storage chambers. Beans and corn ripen at the same time and those beans not eaten green are dried and stored in stone chambers for winter use.

The Havasupai have innumerable ways of preparing corn. Only 252

The/99 cont./
131 inaccessibility of their cañon home has tended to keep them
177 immune from outside influences, so that in many ways their
life is still delightfully primitive. Their typical dwelling
342 consists of a framework covered with brush or tule and sometimes with an outer covering of earth. In summer a four-post brush shelter is erected, which affords protection from the sun and allows free circulation of air.

262 The agave plant, cut and prepared in much the same way as by the Apache, has always been an important article of food among these people. Other native vegetal foods are grass seeds
224 and piñon nuts. From time immemorial the Havasupai have
[321] been hunters. On the approach of winter they left the cañon for the upper levels, built wickiups of boughs and bark, and spent the cold season in hunting. Deer were the principal game, although they killed some mountain sheep and an occasional black
[251] bear. Much of the venison was cut in thin strips and dried for
237 summer use. Deerskin dressed by the Havasupai was considered
281 the best by all neighboring tribes; consequently, it not only
[439] furnished clothing, but was an important medium of barter. But the life of the Havasupai has changed. Game is scarce, and
177 224 the Government does not willingly grant them permission to
648 hunt on the surrounding mesas, hence there is little wonder that the wrinkled veterans long for the old days when game was plentiful and they hunted where they would. "Now all is changed," they say. "We cannot go out of the cañon without asking the white man. We dare not hunt deer, as the game must be saved for the Háiko. We are no longer men; we are like little children; we must always ask Washington!"

241 Corn is now their chief staple, besides which they raise
262 beans, squashes, melons, pumpkins, sunflowers, peaches, apricots,
171 and figs. They prepare corn in countless ways, corresponding
252 largely to those of the Hopi. In fact, the modes of preparing corn by all tribes of /100/ the Southwest are much the same. Much of the crop is allowed to ripen on the stalk; this is later ground into meal on the metate. Quantities of green corn are harvested, roasted in large pits with the husks on, and hung to dry. This may be ground or simply shelled and cooked, either alone or with beans, meat, and dried squash. Like the figs, their